

APPENDIX K

USDA-FS REGION 2 SENSITIVE SPECIES AND MANAGEMENT INDICATOR SPECIES EVALUATION AND BLM SENSITIVE SPECIES EVALUATION FOR THE SOUTH POWDER RIVER BASIN COAL EIS

USDA-FS REGION 2 SENSITIVE AND MANAGEMENT INDICATOR SPECIES

Species that have been identified by the Regional Forester as sensitive species and management indicator species must be considered for the three Lease by Application (LBA) tracts that include Forest System Lands, administered by the U.S. Department of Agriculture – Forest Service (USDA-FS). These tracts are the NARO North, Little Thunder, and West Roundup LBA Tracts. The purpose of this Appendix is to provide information about the potential environmental effects that leasing these tracts would have on USDA-FS Region 2 Sensitive wildlife and vegetative species (terrestrial and aquatic) and USDA-FS Thunder Basin National Grassland (TBNG) Forest Plan Management Indicator Species.

USDA-FS REGION 2 SENSITIVE SPECIES

The USDA-FS classifies species as “Sensitive” when they meet one or more of the following three criteria: 1) the species is declining in numbers or occurrences, and evidence indicates it could be proposed for federal listing as threatened or endangered if action is not taken to reverse or stop the downward trend; 2) the species’ habitat is declining and continued loss could result in population declines that lead to federal listing as threatened or endangered if action is not taken to reverse or stop the decline; and 3) the species’ population or habitat is stable but limited. In addition to these criteria, a ranking system is used to identify species for Sensitive status, which is outlined in USDA-FS Manual 2670-2671. Table K-1 lists species that have been identified as “Sensitive” for USDA-FS Region 2.

The USDA-FS Douglas Ranger District has reviewed the entire list of animal and plant sensitive species for USDA-FS Region 2 and eliminated those species that occur on the TBNG, but are outside of any effects of the proposal (geographically or biologically), from further review. The species listed in Table K-2 will be evaluated for potential effects from the Proposed Actions and alternatives. These species have been identified as potentially inhabiting the project planning area or potentially affected by the Proposed Actions.

HABITAT AND OCCURRENCES ON AND NEAR THE NARO NORTH, LITTLE THUNDER, AND WEST ROUNDUP LBA TRACTS

Site-specific data on the occurrence of USDA-FS sensitive species on the NARO North, Little Thunder, and West Roundup LBA Tracts were obtained from the Wyoming Department of Environmental Quality/Land Quality Division (WDEQ/LQD) permit applications and annual reports for the North Antelope/Rochelle Complex, Black Thunder Mine, North Rochelle Mine, and other mines in this area. Wildlife surveys have been conducted on the LBA tracts during baseline and annual monitoring surveys for the existing mines, which include each mine’s current permit area and a two-mile surrounding area. In addition, Powder River Coal Company (PRCC) conducted wildlife baseline investigations in 2000 on the NARO North LBA Tract, Thunder Basin

Table K-1. USDA-FS Region 2 Sensitive Species List (provided by USDA-FS June 2002).

Latin Name	Common Name	Status on TBNG
PLANTS		
<i>Pyrrocoma carthamoides</i> var. <i>subsquarqrosus</i>	Absaroka goldenweed	
<i>Malaxis brachypoda</i>	Adder's-mouth	
<i>Parthenium alpinum</i>	Alpine feverfew	
<i>Eriophorum altaicum</i> var. <i>neogaeum</i>	Altai cottongrass	
<i>Adenocaulon bicolor</i>	American trail plant	
<i>Corallorhiza odontorhiza</i>	Autumn coralroot	
<i>Salix serissima</i>	Autumn willow	
<i>Austragalus proximus</i>	Aztec milk-vetch	
<i>Gilia penstemonoides</i>	Beardtongue gilia	
<i>Sanguinaria canadensis</i>	Bloodroot	
<i>Eriogonum brandegee</i>	Brandeggee wild-buckwheat	
<i>Penstemon caryi</i>	Cary beardtongue	
<i>Cypripedium fasciculatum</i>	Clustered lady's-slipper	
<i>Aletes humilis</i>	Colorado aletes	
<i>Gaura neomexicana coloradoensis</i>	Colorado butterfly plant	
<i>Ptilagrostis mongholica porteri</i>	Colorado false needle grass	
<i>Frasera coloradensis</i>	Colorado gentian	
<i>Machaeranthera coloradoensis</i>	Colorado tansy-aster	
<i>Scirpus cyperinus</i>	Cottongrass bulrush	
<i>Townsendia condensate</i> var. <i>anomela</i>	Cushion townsend-daisy	
<i>Eriogonum visherii</i>	Dakota wild-buckwheat	
<i>Phacelia scopulina</i> var. <i>submutica</i>	Debeque scorpion-weed	
<i>Penstemon degeneri</i>	Degener's penstemon	
<i>Asclepias unicalis</i>	Dwarf milkweed	
<i>Equisetum scirpoides</i>	Dwarf scouring-rush	
<i>Carex alopecoidea</i>	Fox-tail sedge	
<i>Lesquerella fremontii</i>	Fremont's bladderpod	
<i>Potentilla effusa</i> var. <i>rupicola</i>	Front Range cinquefoil	
<i>Epipactis gigantea</i>	Giant helleborine	
<i>Ipomopsis globularis</i>	Globe gilia	
<i>Carex intumescens</i>	Greater bladder sedge	
<i>Viola selkirkii</i>	Great-spurred violet	
<i>Primula egaliksensis</i>	Greenland primrose	
<i>Austragalus anisus</i>	Gunnison milk-vetch	
<i>Festuca hallii</i>	Hall's fescue	
<i>Sullivantia hapemanii</i> var. <i>purpusii</i>	Hapeman's coolwort (Colorado)	
<i>Sullivantia hapemanii</i> var. <i>hapemanii</i>	Hapeman's coolwort (Wyoming)	
<i>Penstemon harringtonii</i>	Harrington's beardtongue	
<i>Salix lanata calcicola</i>	Hulten woolly willow	
<i>Ipomopsis spicata robruthii</i>	Kirkpatrick ipomopsis	
<i>Aquilegia laramiensis</i>	Laramie columbine	
<i>Sphaeromeria simplex</i>	Laramie false sagebrush	
<i>Platanthera orbiculata</i>	Large round-leaf orchid	
<i>Carex livida</i>	Livid sedge	
<i>Carex pedunculata</i>	Long-stalk sedge	
<i>Muhlenbergia glomerata</i>	March muhly	

Table K-1. USDA-FS Region 2 Sensitive Species List (provided by USDA-FS June 2002) (Continued).

Latin Name	Common Name	Status on TBNG
PLANTS (continued)		
<i>Astragalus molybdenus</i>	Molybdenum milk-vetch	
<i>Salix myrtillofolia</i> var. <i>myrtillofolia</i>	Myrtle-leaf willow	
<i>Parrya nudicaulis</i>	Naked-stem wallflower	
<i>Botrychium lineare</i>	Narrow-leaved moonwort	
<i>Arnica lonchophylla</i>	Northern arnica	
<i>Rubus arcticus acaulis</i>	Northern blackberry	
<i>Ipomopsis polyantha</i> var. <i>polyantha</i>	Pagosa skyrockets	
<i>Lesquerella pruinosa</i>	Pagosa Springs bladderpod	
<i>Botrychium campestre</i>	Pale moonwort	
<i>Agoseris lackschewitzii</i>	Pink agoseris	
<i>Botrychium campestre</i>	Prairie moonwort	
<i>Arctostaphylos rebra</i>	Red manzanita	
<i>Botrychium echo</i>	Reflected moonwort	
<i>Astragalus ripleyi</i>	Ripley's milk-vetch	
<i>Neoparrya lithophila</i>	Rock-loving aletes	
<i>Scirpus rollandii</i>	Rolland's bulrush	
<i>Drosera rotundifolia</i>	Round-leaf sundew	
<i>Amerorchis rotundifolia</i>	Round-leaved orchid	
<i>Chenopodium cycloides</i>	Sandhill goosefoot	
<i>Armeria maritime</i> var. <i>siberica</i>	Sea pink	
<i>Shoshonea pulvinata</i>	Shoshonea	
<i>Draba smithii</i>	Smith's whitlow-grass	
<i>Braya glabella</i>	Smooth rockcress	
<i>Aster mollis</i>	Soft aster	
<i>Adiantum capillus-veneris</i>	Southern maidenhair fern	
<i>Ambrosia linearis</i>	Streaked ragweed	
<i>Lycopodium complanatum</i>	Trailing clubmoss	
<i>Lycopodium dendroideum</i>	Treelike clubmoss	
<i>Botrychium ascendens</i>	Upward-lobe moonwort	
<i>Mimulus gemmiparus</i>	Weber's monkey-flower	
<i>Ipomopsis aggregata</i>	Weber's scarlet-gilia	
<i>Descurainia torulosa</i>	Wind River tansy-mustard	
<i>Erigeron lanatus</i>	Wooly fleabane	
FISH		
<i>Hybopsis aestivalis tetranemus</i>	Chub, Arkansas River speckled	
<i>Platygobio gracilis</i>	Chub, flathead	K
<i>Hybopsis meeki</i>	Chub, sicklefin	
<i>Phoxinus erythrogaster</i>	Dace, southern red belly	
<i>Etheostoma cragini</i>	Darter, Arkansas	
<i>Fundulus diaphanus</i>	Killfish, banded	
<i>Notropis girardi</i>	Shiner, Arkansas River	
<i>Cyleptus elongatus</i>	Sucker, blue	
<i>Fundulus sciadicus</i>	Topminnow, plains	K
<i>Oncorhynchus (=Salmo) clarki pleuriticus</i>	Trout, Colorado River cutthroat	
<i>Oncorhynchus (=Salmo) clarki virginalis</i>	Trout, Rio Grande cutthroat	
<i>Oncorhynchus (=Salmo) clarki bouveri</i>	Trout, Yellowstone cutthroat	

Table K-1. USDA-FS Region 2 Sensitive Species List (provided by USDA-FS June 2002) (Continued).

June 2002, (Continued).		Status on TBNG	
Latin Name	Common Name		
INVERTEBRATES			
<i>Speyeria idalia</i>	Butterfly, regal fritillary	S	
<i>Phyciodes batesii</i>	Butterfly, tawny crescent		
<i>Acronicta albarufa</i>	Moth, albarufan dagger		
<i>Ethmia monachella</i>	Moth, lost ethmiid		
<i>Decodes stevensi</i>	Moth, Stevens' tortricid		
<i>Discus shimeki cockerellii</i>	Snail, Cockerell's striate disc		
<i>Oreohelix strigosa cooperi</i>	Snail, Cooper's Rocky Mountain		
<i>Acroloxus coloradensis</i>	Snail, Rocky Mountain capshell		
REPTILES AND AMPHIBIANS			
<i>Rana pipiens</i>	Frog, northern leopard	K	
<i>Rana pretiosa</i>	Frog, spotted	K	
<i>Rana sylvatica</i>	Frog, wood		
<i>Phrynosoma cornutum</i>	Lizard, Texas horned		
<i>Ambystoma tigrinum</i>	Salamander, tiger		
<i>Storeria occipitomeoculatae pahasapae</i>	Snake, Black Hills redbellied		
<i>Arizona elegans blanchardi</i>	Snake, Kansas glossy		
<i>Tropidoclonion lineatum</i>	Snake, lined		
<i>Lampropeltis triangulum multistrata</i>	Snake, pale milk		S
<i>Diadophis punctatus arnyi</i>	Snake, prairie ringneck	S	
<i>Leptotyphlops dulcis</i>	Snake, Texas blind		
<i>Rhinocheilus lecontei tessellatus</i>	Snake, Texas longnosed		
<i>Bufo boreas boreas</i>	Toad, boreal western		
<i>Kinosternon flavescens flavescens</i>	Turtle, yellow mud		
MAMMALS			
<i>Euderma maculatum</i>	Bat, spotted		K
<i>Plecotus townsendii</i>	Bat, Townsend's big-eared		
<i>Martes pennanti</i>	Fisher		
<i>Vulpes velox</i>	Fox, swift		
<i>Thomomys fuscus</i>	Gopher, Wyoming pocket		
<i>Spermophilus tridecemlineatus alleni</i>	Ground squirrel, Allen's thirteen-lined		
<i>Felis lynx canadensis</i>	Lynx, North American		
<i>Marmota flaviventris notioros</i>	Marmot, Wet Mountains yellow-bellied		
<i>Martes americana</i>	Marten	K	
<i>Zapus hudsonicus preblei</i>	Mouse, Prebles' meadow jumping		
<i>Myotis thysanodes pahasapensis</i>	Myotis, fringe-tailed		
<i>Cynomys ludovicianus</i>	Prairie dog, black-tailed		
<i>Bassariscus astutus</i>	Ringtail		
<i>Sorex nanus</i>	Shrew, dwarf		
<i>Microsorex hoyi montanus</i>	Shrew, pygmy		
<i>Conepatus mesoleucus figginsi</i>	Skunk, Colorado hognosed		
<i>Microtus richardsoni</i>	Vole, water	S	
<i>Mustela rixosa</i>	Weasel, least		
<i>Gulo gulo luscus</i>	Wolverine, North American		

Table K-1. USDA-FS Region 2 Sensitive Species List (provided by USDA-FS June 2002) (Continued).

Latin Name	Common Name	Status on TBNG
BIRDS		
<i>Botaurus lentiginosus</i>	Bittern, American	U
<i>Grus canadensis</i>	Crane, greater sandhill	
<i>Coccyzus americanus</i>	Cuckoo, western yellow-billed	K
<i>Numenius americanus</i>	Curlew, long-billed	K
<i>Histrionicus histrionicus</i>	Duck, harlequin	
<i>Contopus borealis</i>	Flycatcher, olive-sided flycatcher	
<i>Epidonax trailii extimus</i>	Flycatcher, southwestern willow	
<i>Accipiter gentilis apache</i>	Goshawk, Apache northern	
<i>Accipiter gentilis</i>	Goshawk, northern	K
<i>Tympanachus phasianellus columbianus</i>	Grouse, Columbian sharp-tailed	
<i>Buteo regalis</i>	Hawk, ferruginous	K
<i>Plegadis chihi</i>	Ibis, white-faced	K
<i>Regulus satrapa</i>	Kinglet, golden-crowned	
<i>Gavia immer</i>	Loon, common	K
<i>Progne subis</i>	Martin, purple	
<i>Falco columbarius</i>	Merlin	K
<i>Sitta pygmaea</i>	Nuthatch, pygmy	
<i>Pandion haliaetus</i>	Osprey	U
<i>Aegolius funereus</i>	Owl, boreal	
<i>Otus flammeolus</i>	Owl, Flammulated	
<i>Athene cunicularia</i>	Owl, western burrowing	K
<i>Tympanachus pallidicinctus</i>	Prairie chicken, lesser	
<i>Charadrius montanus</i>	Plover, mountain	K
<i>Charadrius alexandrinus nivosus</i>	Plover, western snowy	
<i>Tympanachus cupido</i>	Prairie chicken, greater	
<i>Bartramia longicauda</i>	Sandpiper, upland	K
<i>Lanius ludovicianus</i>	Shrike, loggerhead	K
<i>Ammodramus bairdii</i>	Sparrow, Baird's	K
<i>Passerella iliaca</i>	Sparrow, fox	K
<i>Cygnus buccinator</i>	Swan, trumpeter	
<i>Cypseloides niger</i>	Swift, black	
<i>Chlidonias niger</i>	Tern, black	K
<i>Picoides tridactylus</i>	Woodpecker, three-toed	
<i>Picoides arcticus</i>	Woodpecker, black-backed	
<i>Melanerpes lewis</i>	Woodpecker, Lewis'	K

Status Codes:

K = Known occurrence in vicinity. Date of last observation indicates that species still occurs in area.

N = No recent observations; surveys recently completed; may be historic records; potential habitat possible.

S = Suspected occurrence. May be historic records but no recent observations. Suitable habitat likely.

U = Unknown occurrence, more surveys may be needed, may be historic records, potential habitat possible.

Table K-2. USDA-FS Region 2 Listed Sensitive Species That May Occur in the TBNG or be Impacted by Leasing the NARO North, Little Thunder, and West Roundup LBA Tracts (provided by USDA-FS Douglas Ranger District, September 2002).

Name	Status in TBNG	Habitat and Occurrence in TBNG
AMPHIBIANS AND REPTILES		
Northern leopard frog <i>Rana pipens</i>	K	Shallow, permanent, or semi-permanent standing water with at least some emergent vegetation (Wagner 1997). Deeper lakes or ponds with well-oxygenated water that does not freeze at bottom required for over wintering (Wagner 1997). Found throughout Wyoming (Baxter and Stone 1980, Luce et al. 1999).
Tiger salamander <i>Ambystoma tigrinum</i>	K	Sagebrush plains, forests, and meadows near water including riparian areas, streams, wetlands, ponds. Relatively common throughout Wyoming (Baxter and Stone 1980, Luce et al. 1999), documented during annual wildlife surveys for the Antelope Mine, Black Thunder Mine, and North Rochelle Mine.
FISH		
Flathead chub <i>Hybopsis gracilis</i>	S	Documented in Antelope Creek and other tributary drainages during late 1970's water resource surveys.
Plains topminnow <i>Fundulus sciadicus</i>	U	Species known from northeast Colorado and eastern Wyoming.
Banded killifish <i>Fundulus diaphanus</i>	U	Species known from northeast Nebraska.
MAMMALS		
Black tailed prairie dog <i>Cynomys ludovicianus</i>	K	Basin-prairie shrub, grasslands. Relatively abundant in Campbell County. The TBNG harbors one of the seven major colony complexes remaining in North America.
Swift fox <i>Vulpes velox</i>	K	Flat to gently rolling, short or mixed grass prairies, generally lacking in shrubs or woody vegetation (Cotterill 1997). Swift foxes use multiple den sites year-round for shelter, protection from predators, and rearing young.
BIRDS		
Burrowing owl <i>Athene cunicularia</i>	K	Grasslands, basin-prairie shrub. Requires burrows, primarily of badgers and prairie dogs, for nesting and roosting (Haug et al. 1993). Summer resident of open rangeland habitats throughout Wyoming, including the TBNG (Luce et al. 1999). Most burrowing owl nests in the TBNG are found in prairie dog colonies.

Table K-2. USDA-FS Region 2 Listed Sensitive Species That May Occur in the TBNG or be Impacted by Leasing the NARO North, Little Thunder, and West Roundup LBA Tracts (provided by USDA-FS Douglas Ranger District, September 2002) (Continued).

Name	Status in TBNG	Habitat and Occurrence in TBNG
BIRDS (continued)		
Ferruginous hawk <i>Buteo regalis</i>	K	Basin-prairie shrub, grasslands, rock outcrops. Construct platform stick nest in trees, on cliff ledges, or on ground. Summer TBNG resident.
Loggerhead shrike <i>Lanius ludovicianus</i>	K	Relatively open, heterogeneous habitats with perches for hunting and thorns, sharp twigs, or barbed wire for impaling prey (Yosef 1996). Common summer resident throughout Wyoming (Luce et al. 1999).
Long-billed curlew <i>Numenius americanus</i>	K	Grasslands, plains foothills, wet meadows, prefers to nest in areas with large open expanses of grassland, with relatively low vegetation, bare ground, and few shrubs (Hill 1998). Relatively uncommon summer resident of grasslands and sagebrush-grasslands in Wyoming (Luce et al. 1999).
Upland sandpiper <i>Bartramia longicauda</i>	K	Prairies and meadows. Uncommon summer resident of the eastern plains of Wyoming, including the TBNG (Luce et al. 1999).

Status Codes:

K = Known occurrence in vicinity. Date of last observation indicates that species still occurs in area.

S = Suspected occurrence. May be historic records but no recent observations. Suitable habitat likely.

U = Unknown occurrence, more surveys may be needed, may be historic records, potential habitat possible.

Coal Company (TBCC) conducted wildlife baseline investigations in 2002 on the Little Thunder LBA Tract, and Triton Coal Company (TCC) conduct wildlife baseline investigations in 2002 on the West Roundup LBA Tract. Only fisheries and aquatics studies have been conducted for the NARO North, Little Thunder, and West Roundup LBA Tracts. Fish sampling was conducted during baseline studies for the North Antelope and Rochelle Mines in the late 1970s, the North Rochelle Mine in 1980-81, and the Little Thunder LBA Tract in 2002. The West Antelope LBA Tract does not include any TBNG lands administered by USDA-FS, but more extensive fisheries and aquatics studies have been conducted along Antelope Creek and its tributaries for the Antelope Mine. The following discussion summarizes the results of these studies. Commonwealth Associates, Inc. conducted baseline aquatic studies for Antelope Coal Company (ACC) in late September 1978 and mid-June 1979. The surveys included four sites on Antelope Creek (one upstream of the mine, one downstream, and two within the mine area) and one site on Horse Creek, a tributary of Antelope Creek, near its confluence with Antelope Creek. Of the

three fish species listed in Table K-2, the flathead chub (*Platygobio gracilis*), plains topminnow (*Fundulus sciadicus*), and the banded killifish (*Fundulus diaphanus*), only the flathead chub was recorded in Antelope Creek during these baseline surveys (Commonwealth Associates, Inc. 1980). This species was described as “relatively common”, but it constituted less than five percent of the stream catch relative abundance during either survey period. It was not collected at the station upstream from the mine, where water was nearly absent during both sampling periods. No fish were found in Horse Creek but Commonwealth Associates Inc. speculated that many of the fishes that inhabit Antelope Creek probably could also be found in Horse Creek during periods of stream flow. In 1998, minnow traps were placed in two pools in Horse Creek as part of baseline studies for the Horse Creek LBA Tract. The only species captured in the traps was the green sunfish (*Lepomis cyanellus*).

The flathead chub was also collected in Antelope Creek during studies by Wesche et al. (1978). Those studies occurred from 1975 through 1977 and included the stretch of Antelope Creek from its mouth upstream to about the middle of the Antelope Mine permit area (about the uppermost extent of where this species was detected during the Antelope Mine baseline studies). None of the three species were collected in Porcupine Reservoir, a 40- to 50-acre impoundment near the mouth of Porcupine Creek, a tributary to Antelope Creek, during studies conducted by Ecology Consultants, Inc. in 1977.

According to the baseline report for Antelope Mine, Baxter and Simon (1970) reported the presence of plains topminnows in Cheyenne River headwater streams, and suggest they were probably introduced (Antelope Creek is a headwater stream of the Cheyenne River). The baseline report does not name the specific headwater streams where Baxter and Simon found this species.

NARO North LBA Tract

Stretches of two tributaries to Porcupine Creek (Boss Draw and Corder Creek) cross USDA-FS land in the NARO North LBA Tract, and the Porcupine Creek valley passes between USDA-FS land in Sections 26 and 35, T.42N., R.71W. Porcupine Creek is a tributary of Antelope Creek, which is located approximately seven miles south of the NARO North LBA Tract. Porcupine Creek is an ephemeral to intermittent stream, which includes isolated deeper pools that tend to go dry during drought periods. Boss Draw and Corder Creek are small ephemeral drainages, which do not support fisheries under natural conditions. The addition of produced water from coal bed methane (CBM) wells in the area could increase aquatic habitat for fish species in this area if sufficient water is produced to create a perennial flow in Antelope Creek and any of its tributaries. Thunderbird Wildlife Consulting, Inc. (TWC) does not have complete aquatics baseline reports from the North Antelope and Rochelle Mines’ permit document, although portions they do have indicate no records of USDA-FS sensitive fish species.

Wetland habitats suitable for the northern leopard frog and tiger salamander are very limited in the vicinity of the NARO North LBA Tract. Livestock grazing and annual desiccation further limit the suitability of wetlands for the leopard frog. However, both species have been documented in the area. Leopard frogs were documented during original baseline surveys for the North Antelope and Rochelle Mines in the late 1970s. In April 1996, one leopard frog was seen in a pool along an ephemeral drainage just southeast of the North Antelope/Rochelle Complex mine permit area. Tiger salamander larvae were observed in a pool along Porcupine Creek during 2001. Tiger salamanders have been documented living in prairie dog burrows in this general area.

No prairie dog colonies are located on the NARO North LBA Tract. One colony is located in SW¼ of Section 26, T.42N., R.71W., approximately one-half mile from USDA-FS lands included in the tract.

Habitats in the vicinity of the NARO North LBA Tract are marginal (relatively dense sagebrush stands) for the swift fox. Sightings are rare in southern Campbell County. The species has only been documented once by TWC biologists during 22 years of wildlife studies at coal mines in the Powder River Basin (PRB). On the night of March 27, 2002, one swift fox was observed trotting beside the relocated Reno County Road in SW¼ SE¼ of Section 15, T.42N., R.70W. The USDA-FS has also documented the swift fox in this general area. They have documented swift fox presence through either direct observation and/or through the presence of tracks left on survey tracking plates. The USDA-FS conducted focused surveys in this general area throughout the mid- to late-1990s. Swift fox presence has been documented at several locations near these LBA tracts, in Sections 9, 14, and 22 of T.43N., R.71W. Additional locations have been documented west of the analysis area, south of Wright, Wyoming.

Burrowing owls have nested in the area, but no nests have been documented on the NARO North LBA tract. Although no prairie dog colonies exist on the tract, owls could potentially nest in badger burrows.

There are three active ferruginous hawk nests located on USDA-FS lands on the tract, and others are located within two miles. There are scattered nesting sites for the loggerhead shrike on the NARO North LBA Tract, but they have been documented to nest on and adjacent to the tract. Upland sandpipers are relatively uncommon in the North Antelope/Rochelle Complex area but suitable habitat is abundant. Long-billed curlews have only been documented a few times in the area and suitable habitat is quite limited.

Little Thunder LBA Tract

A portion of the Little Thunder Creek drainage between Little Thunder Reservoir and Reno Reservoir crosses USDA-FS land in Section 24, T.43N., R.71W. Little Thunder Creek is an ephemeral tributary to Black Thunder

Creek, which is a tributary to the South Fork of the Cheyenne River. Little Thunder Creek is not known to support fisheries under natural conditions this far up the drainage; however, CBM development has increased habitat for fish species such that sufficient water is now produced to create a perennial flow in Little Thunder Creek and its tributaries. This has occurred since the development of a Williams (previously Barrett) CBM development, which was authorized in 1998. In addition, Little Thunder Reservoir has historically and currently maintains both game and non-game fisheries. This reservoir is upstream of the analysis area on Little Thunder Creek. Due to a continual inflow of CBM water to Little Thunder Reservoir, there is a continual outflow over its spillway. This increases the potential for fish to begin colonizing Little Thunder Creek downstream and into the analysis area. No USDA-FS sensitive fish species have been documented in the vicinity of the Little Thunder LBA Tract.

Wetland habitats suitable for the northern leopard frog and tiger salamander are limited in the vicinity of the Little Thunder LBA Tract. However, water production from CBM development has increased potential habitat for both species. This improved habitat is currently limited to a perennial flow in Little Thunder Creek and some of its tributaries. Livestock grazing and annual desiccation further limit the suitability of wetlands for the leopard frog through the reduction of emergent vegetation. Both species have been documented in the area. Leopard frogs were relatively abundant along Little Thunder Creek during original baseline surveys for the Black Thunder Mine in 1974. The species has only been recorded once since that time. Both adult and larval tiger salamanders were observed southeast of the Little Thunder LBA Tract in 2001 and 2002. Larvae were also found along North Prong Little Thunder Creek about two miles northwest of the LBA tract in 2002.

No prairie dog colonies are located on the Little Thunder LBA Tract. The nearest colonies are more than one mile away.

Habitats in the vicinity of the Little Thunder LBA Tract are marginal (relatively dense sagebrush stands) for the swift fox. Sightings are rare in southern Campbell County. The species has only been documented once by TWC biologists during 22 years of wildlife studies at coal mines in the PRB. On the night of March 27, 2002, one swift fox was observed approximately five miles southeast of the proposed lease area. The USDA-FS has also documented the swift fox in this general area. They have documented swift fox presence through either direct observation and/or through the presence of tracks left on survey tracking plates. The USDA-FS conducted focused surveys in this general area throughout the mid- to late-1990s. Swift fox presence has been documented at several locations near these LBA tracts, in Sections 9, 14, and 22 of T.43N., R.71W. The Section 14 location is less than one-half mile from the Little Thunder LBA Tract. Additional locations have been documented west of the analysis area, south of Wright, Wyoming.

Burrowing owls have nested in the area but no nests have been documented on the Little Thunder LBA Tract. Although no prairie dog colonies exist on the tract, owls could potentially nest in badger burrows.

Five active ferruginous hawk nests are located on or in close proximity to USDA-FS lands within the Little Thunder LBA Tract. The loggerhead shrike has been documented in the area but nesting habitat on the LBA tract is very limited. Upland sandpipers are relatively uncommon in the Black Thunder Mine area but suitable habitat is abundant. Long-billed curlews have only been documented a few times in the area and suitable habitat is quite limited.

West Roundup LBA Tract

A portion of the Trussler Creek drainage crosses USDA-FS land in Sections 8 and 9, T.42N., R.70W., and a small portion of Olson Draw, a tributary to Trussler Creek crosses USDA-FS land in Section 7, T.42N., R.70W. Trussler Creek is a tributary of Little Thunder Creek. Little Thunder Creek is a tributary of Black Thunder Creek, which is a tributary of the South Fork of the Cheyenne River. Olson Draw and Trussler Creek are ephemeral streams, which do not support fisheries under natural conditions; however, CBM development could increase habitat for fish species if sufficient water is produced to create a perennial flow in Little Thunder Creek or its tributaries. No USDA-FS sensitive fish species have been documented in the vicinity of the West Roundup LBA Tract.

Wetland habitats suitable for the northern leopard frog and tiger salamander are very limited in the vicinity of the West Roundup LBA Tract. Livestock grazing and annual desiccation further limit the suitability of wetlands for the leopard frog. That species has not been documented in the North Rochelle Mine area. Many tiger salamander larvae were seen in several dugouts along Trussler Creek in the SE $\frac{1}{4}$ of Section 5, T.42N., R.70W. during July 2001. During a light rain storm on the night of August 9, 2001, at least 10 adult salamanders were seen crossing the Reno County Road (paved) adjacent to the North Rochelle Mine railroad spur. In May 2002, two desiccated salamanders were found at a burrowing owl nest north of the Reno County Road in Section 5, T.42N., R.70W.

No prairie dog colonies are located on USDA-FS lands included in the West Roundup LBA Tract. One small colony (less than three acres) is located just north of the USDA-FS Special Use Permit area for the North Rochelle Mine in the SE $\frac{1}{4}$ of Section 5, T.42N., R.70W. Another small colony is present just south of the LBA in Section 18, T.42N., R.70W.

Habitats in the vicinity of the West Roundup LBA Tract are marginal (relatively dense sagebrush stands) for the swift fox. Sightings are rare in southern Campbell County. The species has only been documented once by TWC biologists during 22 years of wildlife studies at coal mines in the PRB. On the

night of March 27, 2002, one swift fox was observed approximately two miles southeast of the proposed lease area. The nearest documented USDA-FS sighting is over four miles northwest of this LBA tract.

Burrowing owls have nested in the area but no nests have been documented on the West Roundup LBA Tract. Although no prairie dog colonies exist on the tract, owls could potentially nest in badger burrows. There are two active ferruginous hawk nests located on the LBA tract and a third is within one-half mile of the tract. The loggerhead shrike has been documented in the area but nesting habitat on the LBA tract is very limited. Upland sandpipers are relatively uncommon in the North Rochelle Mine area but suitable habitat is abundant. Long-billed curlews have only been documented a few times in the area and suitable habitat is quite limited.

DIRECT AND INDIRECT EFFECTS ON SENSITIVE SPECIES

The following discussion is an evaluation of the potential direct and indirect environmental effects on USDA-FS Region 2 Sensitive Species identified as potentially inhabiting the USDA-FS lands on the NARO North, Little Thunder, and West Roundup LBA Tracts.

NARO North LBA Tract

Leasing and mining the NARO North LBA Tract is not expected to impact any of the Region 2 sensitive fish species. The USDA-FS lands included in this tract that would be disturbed include short stretches of Boss Draw and Corder Creek, which are ephemeral tributaries to Porcupine Creek, an ephemeral to intermittent tributary to Antelope Creek. Boss Draw and Corder Creek do not support fisheries under natural conditions. Produced water from CBM wells could temporarily increase aquatic habitat for fish in this area. Antelope Creek and an adjacent buffer zone would not be disturbed as a result of this leasing action or any of the leasing actions included in this EIS. Surface runoff sediment from the mined lands, which could affect water quality in Antelope Creek, would be deposited in ponds or other sediment control devices located inside the North Antelope/Rochelle Complex mine permit area.

Leasing and mining are not expected to impact either the black-tailed prairie dog or swift fox. There are no black-tailed prairie dog colonies located on the NARO North LBA Tract, and swift fox do not appear to inhabit the lease area.

Mining and associated activities have the potential to destroy nests and impact the reproductive success of ferruginous hawks and other raptors nesting in the area. However, PRCC has been diligent about avoiding and mitigating such impacts in the past through a variety of means. PRCC has monitored nesting raptor populations, maintained and implemented current U.S. Fish and Wildlife Service (USFWS) approved Raptor Mitigation Plans, adjusted operations to provide temporal and spatial buffers around raptor nests, and

ensured that new power transmission lines at the mine conform to the Avian Powerline Interaction Commission guidelines (EEI/RRF 1996). Direct effects to ferruginous hawks and other raptors may occur if any nests are destroyed or moved; however, the established practices discussed above will reduce the impacts of these actions. Indirect impacts, such as the temporary loss of foraging habitat during active mining, are not expected to negatively affect the survival or reproductive success of any hawks.

Disturbance of habitats during mining could impact individual burrowing owls, loggerhead shrikes, and upland sandpipers, but is not likely to cause a trend to federal listing or loss of viability. PRCC can avoid direct impacts to burrowing owls by continuing to monitor nesting raptor populations, maintaining and implementing current USFWS approved Raptor Mitigation Plans, and taking precautions to provide adequate temporal and spatial buffers around nests. Assuming active shrike nests are not removed during the breeding season, direct impacts on that species should be minimal. Suitable sandpiper habitat exists on the LBA tract that could be eliminated by mining but direct impacts to individuals are unlikely. Given the paucity of past observations and the marginal habitats available in the area, impacts to the long-billed curlew are unlikely.

Mining the NARO North LBA Tract, if it is leased under the Proposed Action or Action Alternatives, may impact individuals but is not likely to result in the loss of viability on the USDA-FS Planning Area or cause a trend toward federal listing or loss of species viability range-wide for any of the USDA-FS Sensitive Species.

Little Thunder LBA Tract

Leasing and mining the Little Thunder LBA Tract is not expected to impact any of the Region 2 sensitive fish species. The USDA-FS lands included in this tract that would be disturbed includes a portion of the Little Thunder Creek drainage. Historically, Little Thunder Creek has been an ephemeral tributary of Black Thunder Creek, a tributary of the South Fork of the Cheyenne River. As a result of recent CBM development, flow in Little Thunder Creek has become perennial. Little Thunder Creek did not support fisheries under natural conditions, it is not known to support fisheries under current conditions, although produced water from CBM wells has temporarily increased aquatic habitat for fish in this area. Surface runoff sediment from the mined lands, which could affect water quality downstream in Black Thunder Creek, would be deposited in ponds or other sediment control devices located inside the Black Thunder Mine permit area.

Leasing and mining are not expected to impact either the black-tailed prairie dog or swift fox. There are no black-tailed prairie dog colonies located on the Little Thunder LBA Tract. Swift fox have been sighted close to the tract but do not appear to inhabit the lease area to any significant level.

Mining and associated activities have the potential to destroy nests and impact the reproductive success of ferruginous hawks and other raptors nesting in the area. However, TBCC has been diligent about avoiding and mitigating such impacts in the past through a variety of means. TBCC has monitored nesting raptor populations, maintained and implemented current USFWS approved Raptor Mitigation Plans, adjusted operations to provide temporal and spatial buffers around raptor nests, and ensured that new power transmission lines at the mine conform to the Avian Powerline Interaction Commission guidelines (EEI/RRF 1996). Direct effects to ferruginous hawks and other raptors may occur if any nests are destroyed or moved; however, the established practices discussed above will reduce the impacts of these actions. Indirect impacts, such as the temporary loss of foraging habitat during active mining, are not expected to negatively affect the survival or reproductive success of any hawks.

Disturbance of habitats during mining could impact individual burrowing owls, loggerhead shrikes, and upland sandpipers, but is not likely to cause a trend to federal listing or loss of viability. TBCC can avoid direct impacts to burrowing owls by continuing to monitor nesting raptor populations, maintaining and implementing current USFWS approved Raptor Mitigation Plans, and taking precautions to provide adequate temporal and spatial buffers around nests. Assuming active shrike nests are not removed during the breeding season, direct impacts on that species should be minimal. Suitable sandpiper habitat exists on the LBA tract that could be eliminated by mining but direct impacts to individuals are unlikely. Given the paucity of past observations and the marginal habitats available in the area, impacts to the long-billed curlew are unlikely.

Mining the Little Thunder LBA Tract, if it is leased under the Proposed Action or Action Alternatives, may impact individuals but is not likely to result in the loss of viability on the USDA-FS Planning Area or cause a trend toward federal listing of loss of species viability range-wide for any of the USDA-FS Sensitive Species.

West Roundup LBA Tract

Leasing and mining the West Roundup LBA Tract is not expected to impact any of the Region 2 sensitive fish species. The USDA-FS lands included in this tract that would be disturbed includes portions of the Trussler Creek drainage. Trussler Creek is an ephemeral tributary of Little Thunder Creek. Little Thunder Creek is an ephemeral tributary of Black Thunder Creek, a tributary to the South Fork of the Cheyenne River. Trussler Creek does not support fisheries under natural conditions. Produced water from CBM wells could temporarily increase aquatic habitat for fish in this area. Surface runoff sediment from the mined lands, which could affect water quality downstream in Black Thunder Creek, would be deposited in ponds or other sediment control devices located inside the North Rochelle Mine permit area.

Leasing and mining are not expected to impact either the black-tailed prairie dog or swift fox. There are no black-tailed prairie dog colonies located on the West Roundup LBA Tract, and swift fox do not appear to inhabit the lease area. Mining and associated activities have the potential to destroy nests and impact the reproductive success of ferruginous hawks and other raptors nesting in the area. However, TCC has been diligent about avoiding and mitigating such impacts in the past through a variety of means. TCC has monitored nesting raptor populations, maintained and implemented current USFWS approved Raptor Mitigation Plans, adjusted operations to provide temporal and spatial buffers around raptor nests, and ensured that new power transmission lines at the mine conform to the Avian Powerline Interaction Commission guidelines (EEI/RRF 1996). Direct effects to ferruginous hawks and other raptors may occur if any nests are destroyed or moved; however, the established practices discussed above will reduce the impacts of these actions. Indirect impacts, such as the temporary loss of foraging habitat during active mining, are not expected to negatively affect the survival or reproductive success of any hawks.

Disturbance of habitats during mining could impact individual burrowing owls, loggerhead shrikes, and upland sandpipers, but is not likely to cause a trend to federal listing or loss of viability. TCC can avoid direct impacts to burrowing owls by continuing to monitor nesting raptor populations, maintaining and implementing current USFWS approved Raptor Mitigation Plans, and taking precautions to provide adequate temporal and spatial buffers around nests. Assuming active shrike nests are not removed during the breeding season, direct impacts on that species should be minimal. Suitable sandpiper habitat exists on the LBA tract that could be eliminated by mining but direct impacts to individuals are unlikely. Given the paucity of past observations and the marginal habitats available in the area, impacts to the long-billed curlew are unlikely.

Mining the West Roundup LBA Tract, if it is leased under the Proposed Action or Action Alternatives, may impact individuals but is not likely to result in the loss of viability on the USDA-FS Planning Area or cause a trend toward federal listing or loss of species viability range-wide for any of the USDA-FS Sensitive Species.

CUMULATIVE EFFECTS REGARDING SENSITIVE SPECIES

Through early 2002, the lands included in the NARO North, Little Thunder, and West Roundup LBA Tracts have been used primarily for agricultural livestock grazing and hunting. In addition to the proposed project, future activities are likely to include: CBM gas exploration and development; hunting (possibly); livestock grazing; and eventual surface coal mining and reclamation with native plant species.

This general area is experiencing a development boom associated with CBM development operations. This development is at a landscape level. Surface

coal mining tends to have more intense impacts on fairly localized areas, while oil and gas development tends to be less intensive but spread over a larger area. Impacts of oil and gas development and coal mining for some resources, such as groundwater and air quality, tend to be overlapping. Cumulative impacts to wildlife are primarily in the form of habitat disturbance. Both oil and gas development and mining activities have requirements for reclamation of disturbed areas as resources are depleted; however, the net area of energy disturbance in the Wyoming PRB has been increasing. In the short term, this means a reduction in the available habitat for sensitive species. In the long term, habitat will be gradually restored as reclamation proceeds.

No critical habitat for any USDA-FS Sensitive Species has been delineated in the LBA tracts. Any losses that do occur will eventually be mitigated for most species by reclamation with native seed mixes, which may improve habitat quality by reducing the presence of non-native plants (e.g., crested wheatgrass) in the LBA tracts. Leasing the NARO North, Little Thunder, and West Roundup LBA Tracts will not conflict with the current Forest Plan, or any future objectives to manage the area and provide habitat for Sensitive Species.

MITIGATION

Mitigation measures designed to reduce impacts to wildlife that are required by the Surface Mining Control and Reclamation Act and state law are included in Table 4-17 of this EIS. They include:

- using raptor-safe power lines;
- designing fences to permit wildlife passage;
- creating artificial raptor nest sites;
- relocating raptor nests and taking other actions to maintain active nesting pairs;
- restoring premining topography to the maximum extent possible;
- planting a diverse mixture of grasses, forbs, and shrubs in configurations beneficial to wildlife; and
- building and maintaining sediment control ponds or other sediment control devices during mining.

MONITORING

Wildlife monitoring has been and will be conducted annually by the North Antelope/Rochelle Complex, Black Thunder Mine, and North Rochelle Mine as part of the requirements of their existing mining and reclamation permits. These permits will be amended to include the NARO North, Little Thunder, and West Roundup LBA Tracts, respectively, if the tracts are leased as proposed under the Proposed Action or Action Alternatives.

USDA-FS MANAGEMENT INDICATOR SPECIES

As part of the development of the *Land and Resource Management Plan for the TBNG* (USDA-FS 2001a), the USDA-FS identified Management Indicator Species (MIS) using seven criteria, which are listed in Appendix B of the *Final EIS for the Northern Great Plains Management Plans Revision for the TBNG* (USDA-FS 2001b). MIS are “plant or animal species selected because their population changes are believed to indicate the effects of management activities on other species of selected major biological communities or on water quality”. Currently, no plants, fish, or invertebrates are listed as MIS for the TBNG.

Table 3-128 of the *Final EIS for the Northern Great Plains Management Plans Revision for the TBNG* (USDA-FS 2001b) lists three MIS species that were selected by the USDA-FS for the TBNG. These three species are sage grouse, black-tailed prairie dog, and plains sharp-tailed grouse.

Appropriate year-round habitat for the plains sharp-tailed grouse is not available in the vicinity of the NARO North, Little Thunder, or West Roundup LBA Tracts. Sharp-tailed grouse have occasionally been observed in the General Analysis Area, but not on any of the LBA tracts.

Sage grouse monitoring has occurred within the area since 1967. The overall indication is a decreasing population trend. Sage grouse generally do not respond positively to human activities and disturbances. The decline in sage grouse across its range has been attributed, in part, to loss in habitat and increased human disturbances during critical periods of its life cycle. These periods include breeding, nesting, and in some cases during stressful periods due to winter conditions.

There are currently no active sage grouse leks on the NARO North, Little Thunder, or West Roundup LBA Tracts. The nearest lek to the Little Thunder and West Roundup tracts is the Black Thunder lek (NE¼ NW¼ of Section 31, T.43N., R.70W.). That lek has not been attended by grouse since 1993. The four known sage grouse leks that comprise the Rochelle lek complex are located near the NARO North LBA Tract. Two of those leks are active (Payne and Kort) and two have not been attended since at least 1999 (Wilson and Rochelle). The Payne and Kort leks are located in NE¼ NW¼ of Section 26, T.42N., R.70W. and SE¼ SW¼ of Section 31, T.42N., R.69W., respectively. Surveys in 2002 yielded peak counts of 18 and five males on the Payne and Kort leks, respectively.

Because of its proximity to two active leks, development of the NARO North LBA Tract has the most potential to directly affect sage grouse. Potential impacts include: the destruction of active nests during topsoil removal, mortalities caused by additional vehicle traffic, and displacement of grouse from their core home range. Collectively, those factors could diminish the survival and reproductive success of grouse, resulting in a decline of the

Rochelle sage grouse population. If precautions are taken to avoid direct mortalities and disturbances to nests and leks during the breeding season, grouse will have the opportunity to disperse away from mine activities.

The range of sagebrush density and height on all three LBA tracts represents potential year-round habitat for sage grouse. Consequently, development of those tracts could potentially affect grouse through habitat disturbance and degradation. Mining could potentially eliminate all suitable habitat within the lease areas. Although sagebrush is seeded on reclaimed lands, the low recruitment and slow growth rate of sagebrush will render those areas unsuitable for grouse for at least several decades. The construction of new powerlines could diminish the value of otherwise suitable habitats by providing additional perching opportunities for golden eagles (*Aquila chrysaetos*) and thus increasing the predation risk to grouse in those areas.

The black-tailed prairie dog is a “candidate” for possible federal listing. According to the *Final EIS Northern Great Plains Management Plans Revision for the TBNG* (USDA-FS 2001b), long-term population trends for black-tailed prairie dogs on the national grasslands are down. Primary threats include habitat loss and deterioration as a result of cultivation, urban sprawl and fragmentation. However, as indicated in the previous discussion of USDA-FS Region 2 Sensitive Species, the TBNG harbors one of the major black-tailed prairie dog colony complexes remaining in North America.

The occurrence of black-tailed prairie dogs on the NARO North, Little Thunder, and West Roundup LBA Tracts was discussed in the previous section on USDA-FS Region 2 Sensitive Species.

The sage grouse and black-tailed prairie dog would be monitored as part of the ongoing mining activities if these tracts are leased and incorporated into a mining and reclamation plan.

BLM SENSITIVE SPECIES EVALUATION

INTRODUCTION

BLM Wyoming has prepared a list of sensitive species to focus species management efforts towards maintaining habitats under a multiple use mandate. The authority for this policy and guidance comes from the Endangered Species Act (ESA), as amended; Title II of the Sikes Act, as amended; the Federal Land Policy Management Act of 1976 (FLPMA); and the Department Manual 235.1.1A., General Program Delegation, Director, BLM.

The goals of the sensitive species policy are to:

- Maintain vulnerable species and habitat components in functional BLM ecosystems.
- Ensure sensitive species are considered in land management decisions.
- Prevent a need for species listing under the ESA.
- Prioritize needed conservation work with an emphasis on habitat.

PROJECT DESCRIPTION

Under the Proposed Action, BLM will hold separate leases for the federal coal lands in the NARO North and NARO South LBA Tracts as applied for by PRCC, the Little Thunder LBA Tract as applied for by Ark Land Company (ALC), the West Roundup LBA Tract as applied for by TCC, and the West Antelope LBA Tract as applied for by ACC (see Figures 2-1 through 2-5 and the land descriptions in Section 2.1 of this EIS). There are five Proposed Actions, one for each of the LBA tracts. For each tract, the Proposed Action assumes that the applicant for a tract would be the successful bidder on that tract and that each tract would be mined as a maintenance lease for an existing mine. The surface estate on the NARO South and West Antelope LBA Tracts is privately owned. The surface estate on the NARO North, Little Thunder, and West Roundup LBA Tracts includes Forest System Lands, which are part of the TBNG, and privately-owned lands.

SPECIES OCCURRENCE AND HABITAT DESCRIPTIONS

Sensitive species were listed for the BLM Buffalo Field Office within its range. Numerous sensitive species do or could occur within the five LBA tracts. Specialized habitat requirements (i.e., caves, cliffs, calcareous rock outcrops) make occupation for other sensitive species unlikely. Table K-3 lists BLM sensitive species and summarizes their habitat requirements.

Table K-3. BLM Sensitive Species, Habitat Requirements, and Occurrence for the Buffalo Field Office.

Common Name (scientific name)	Habitat
Amphibians	
Northern leopard frog (<i>Rana pipiens</i>)	Beaver ponds, permanent water in plains and foothills
Spotted frog (<i>Rana pretiosa</i>)	Ponds, sloughs, small streams
Birds	
Baird's sparrow (<i>Ammodramus bairdii</i>)	Grasslands, weedy fields
Brewer's sparrow (<i>Spizella breweri</i>)	Basin-prairie shrub
Burrowing owl (<i>Athene cunicularia</i>)	Grasslands, basin-prairie shrub
Ferruginous hawk (<i>Buteo regalis</i>)	Basin-prairie shrub, grasslands, rock outcrops
Greater sage-grouse (<i>Centrocercus urophasianus</i>)	Basin-prairie shrub, mountain-foothill shrub
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Basin-prairie shrub, mountain-foothill shrub
Long-billed curlew (<i>Numenius americanus</i>)	Grasslands, plains, foothills, wet meadows
Northern goshawk (<i>Accipiter gentilis</i>)	Conifer and deciduous forests
Peregrine falcon (<i>Falco peregrinus</i>)	Cliffs
Sage sparrow (<i>Amphispiza bilineata</i>)	Basin-prairie shrub, mountain-foothill shrub
Sage thrasher (<i>Oreoscoptes montanus</i>)	Basin-prairie shrub, mountain-foothill shrub
Trumpeter swan (<i>Cygnus buccinator</i>)	Lakes, ponds, rivers
White-faced ibis (<i>Plegadis chihi</i>)	Marshes, wet meadows
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	Open woodlands, streamside willow and alder groves
Mammals	
Fringed myotis (<i>Myotis thysanodes</i>)	Conifer forests, woodland chaparral, caves and mines
Long-eared myotis (<i>Myotis evotis</i>)	Conifer and deciduous forest, caves and mines
Spotted bat (<i>Euderma maculatum</i>)	Cliffs over perennial water, basin-prairie shrub

Table K-3. BLM Sensitive Species, Habitat Requirements, and Occurrence for the Buffalo Field Office (Continued).

Common Name <i>(scientific name)</i>	Habitat
Mammals (continued)	
Swift fox <i>(Vulpes velox)</i>	Grasslands
Townsend's big-eared bat <i>(Corynorhinus townsendii)</i>	Forests, basin-prairie shrub, caves and mines
Plants	
Porter's sagebrush <i>(Artemisia porteri)</i>	Sparsely vegetated badlands of ashy or tufaceous mudstone and clay slopes; 5,300 to 6,500 ft
William's wafer parsnip <i>(Cymopterus williamsii)</i>	Open ridgetops and upper slopes with exposed limestone outcrops or rockslides; 6,000 to 8,300 ft

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